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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,153	03/19/2004	Naoki Hanashima	P05146-US	6407
21254	7590	03/22/2006	EXAMINER	
MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			CHIEM, DINH D	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/804,153

Applicant(s)

HANASHIMA ET AL.

Examiner

Erin D. Chiem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 8-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This office action is in response to the amendment filed on January 3, 2006. Claims 1-7 are canceled, and currently, claims 8-11 are pending. In view of the amended claims and upon further search and consideration the examiner respectfully withdraws the indicated allowability of claims 10 and 11. Rejections based on the newly cited reference(s) follow.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Ono (US 6,411,765 B1) “Ono” hereinafter.

In Fig. 12, Ono discloses an optical waveguide comprising a core (508); and a clad (504).

Regarding the product-by-process limitation in claim 8 and 9, the examiner did not give patentable weight to those limitations since they do not further contribute to the structural limitation of the optical waveguide. The end product of Ono is reasonably the same as the claimed invention, therefore Ono reads upon the structural limitation of applicant’s claimed invention.

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Furthermore, by applicant admission that the inventive concept of the instance application is a process of making an optical waveguide with less or no residue (page 4, Summary of the Invention) and the end product of an optical waveguide is not patentably distinct from the other prior art methods such as sputtering. Therefore the "102" rejection of the instant product-by-process claims are in accordance to the courts' approval. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono in view of Hecht (Understanding Fiber Optics, Fourth edition).

Ono discloses the claimed invention except for a width of the core,  $d$ , is represented by

the formula: 
$$d < \frac{1.45\lambda}{2\sqrt{n_{core}^2 - n_{clad}^2}}$$

Wherein  $n_{core}$  is the refractive index of the core and  $n_{clad}$  is the refractive index of the clad and  $\lambda$  is the wavelength.

Nor does Ono disclose the cutoff wavelength is 80%-90% of a wavelength in use.

Hecht discloses the expression for modal properties as a function of the core width, wavelength, and numerical aperture (page 77) and further interpreted the expression in term of

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core diameter (page 82) thus it clearly shows that diameter is an optimizable range that is a function of the operational wavelength  $\lambda$  and the numerical aperture.

Similarly, on page 83, Hecht discloses the concept of a cutoff wavelength being value wherein a specific core [width] transmits light in a single mode only at wavelengths longer than

the cutoff wavelength. In the expression  $\lambda_c = \frac{\pi D \sqrt{n_{core}^2 - n_{clad}^2}}{2.4}$  clearly the cutoff wavelength

is a function of the diameter and the numerical aperture that is optimizable.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the waveguide core width with respect the specification of the waveguide operational wavelength and the material used for the core and the clad that determine the numerical aperture. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 223 and see MPEP § 2131.03 III.

Regarding the limitation of the width M of a masking layer is not considered since this limitation is a product-by-process limitation. The mask width is a process step in making the waveguide and the end product of Ono is reasonably the same as the claimed invention, therefore Ono reads upon the structural limitation of applicant's claimed invention. See *In re Brown*.

### ***Response to Arguments***

Applicant's arguments with respect to claims 8-11 have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin D. Chiem whose telephone number is (571) 272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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